



1501 Lee Highway, Arlington, Virginia 22209-1198
An Independent Non Profit Aerospace Organization

6 Sept 19

MEMORANDUM TO: AFA Board of Directors (BoD)/EXCOM/Delegates

CC: Aerospace Education Council

FROM: Jim Hannam, Vice Chairman of the Board, Aerospace Education (AE)

SUBJECT: Report of AFA AE Activities, Oct 2018-Sep 2019

- Following are AE activities, actions of the empowered **Aerospace Education Council (AEC)**, and a list of AEC members and their roles.

- The BoD approved AEC members in October.

Jim Hannam (VA), Vice Chairman, Aerospace Education, AEC Chairman

Sharon Branch (FL): AEC Co-Vice Chairman, responsible for agendas, meeting calls and minutes, educator, recognition, scholarship programs, communications (Emerging Leader)

Stephen Gourley (CO): AEC Co-Vice Chairman, StellarXplorers Director, STEM outreach programs, awards, development, Civil Air Patrol (CAP), Air Force Reserve Officer Training Corps (AFROTC), Air Force Junior Reserve Officer Training Corps (AFJROTC), Arnold Air Society/Silver Wings (AAS/SW), AEC representative on the Strategic Planning Committee

Dick Bundy (VA): Senior Advisor, AE Program Review Team Lead

Bill Croom (TX): Senior Advisor, AFA Finance Committee Liaison, AFA Fellowship Program Review Lead, Air-Minded Strategies Education Initiative Team, AE Budget Team, National Education Awards Team

Mary Anne Thompson (MA): Senior Advisor, AE Integration Team Lead, Teacher of the Year (TOY) co-lead, Fellowship Program Review Team, Civil Air Patrol (CAP)/AFA K-6 Aerospace Connections in Education (ACE) Program Team

Buck Buckwalter (TX): Scholarships/Grants Team Lead, StellarXplorers Team, AEC Budget Team

Gary Copsey (TX): TOY Team

Dave Dietsch (TX): Field Council Liaison, AEC Development Team Lead

Bob Elder (LA): Air-Minded Strategies Education Initiative Lead, Communications Team

Bob George (UT): Scholarship/Grant Programs Team (Pitsenbargers), AFA Fellowship Program Team, AE Development Team (National Director)

Jeff James (OK): Scholarship/Grant Programs Team (Pitsenbargers)

Gabrielle Kearney (AK): AE Communications Team Lead, AAS/SW Liaison, TOY Team, AE Integration Team, meeting minutes recorder (Emerging Leader)

Beth Leavitt (SC): 2018 TOY, TOY Team, AE Integration Team

Susan Mallett (AL): CAP Liaison, TOY Team Lead, CAP/AFA K-6 ACE Program Team Lead

Mitzi Morrison (TX): AE Communications Team, Newsletter and Newslines Editor, CyberPatriot Support Team (Emerging Leader)

Gil Perez (FL): CyberPatriot Support Team Lead, AFA Fellowship Program Team, AEC Development Team, National Awards Team (Emerging Leader)

Richard J. Ragaller (CO): AFROTC/AFJROTC Liaison, Budget Team Lead

Hannah Richmond (TX): AFJROTC/AFROTC Liaison co-lead, AE Communications Team, National Awards Team, AAS/SW Team (Emerging Leader)

Bernie Skoch (AR): CyberPatriot National Commissioner, Special Advisor

Joan Sell (CO): AE Communications Team, Scholarship/Grant Programs Team

Mark Tarpley (OK): Scholarship/Grant Programs Team (Pitsenbargers), Air-Minded Strategies Initiative Team, AEC Development Team (National Director)

Todd Taylor (AL): Air University AFJROTC Liaison to AEC, invited ex-officio member

Justin Thomas (VA): Scholarship/Grant Programs Team (Pitsenbargers)

Bill Yucuis (FL): National Education Awards Lead, StellarXplorers Team

Arnold Air Society and Silver Wings National Commanders: Cadet April Patko (NJ), AAS/CC; Nicholas Carrigan (NY), SW President; invited ex-officio members

Joe Peel (VA): AFA AE Programs Manager

Kari Voliva (VA): VP, Member/Field Relations

- AEC meetings occur approximately every 2 weeks to review, discuss, and approve AFA education programs, issues and policy. The AEC held **Twenty-two** telecom meetings and one face to face meeting during the National Convention. The AEC is organized into teams to address the following tasks/objectives.
- **CyberPatriot: CyberPatriot (CP)** competition began its twelfth season and has grown significantly and continuously--from 8 Florida high school teams participating in CP-I, to approximately 200 teams participating from throughout the US in CP-II, to over 660 teams registered for CP-III, to 1,014 teams for CP-IV, to 1,225 teams for CP-V. CP-VI had 1,537 teams; CP-VII had 2,175 teams, CP V-III had 3,379 teams, CP-IX had 4,404 teams, CP-X had 5,584 teams, CP-XI had 6,387 teams at the beginning of the competition.
 - In CP-III, the competition expanded to include both an All Service Division, with Army, Navy, US Marine Corps and, AFJROTC, CAP and Naval Sea Cadets, plus an Open Division with high school teams from throughout the nation. With CyberPatriot VI, AFA renamed and expanded the program into the **CyberPatriot National Youth Cyber Education Program**, with a Middle School pilot program of 69 teams. CP-VII included an unrestricted Middle School Division and in July of 2015 the **Elementary School Cyber Security Education Initiative (ESCEI)**.
 - **AFA CyberCamps** are continuing to grow in number and popularity; there were 24 in 2015 with growth to 83 in the summer of 2016, 160 in the summer of 2017, and over 260 camps in 2018 including Advanced CyberCamp pilots, in 2019, participating organizations conducted nearly 300 camps, including Advanced CyberCamps. One disappointment is that we have had very limited success in convincing AFA Field Leadership to attend any portion of the camps to show the AFA Flag. We continued the push for AFA Field Leaders to attend in 2019. As a part of this effort the CyberPatriot office provided key chains and challenge coins to the Field attendees at the camps. Five AFA Field Leaders showed interest in attending AFA CyberCamps in 2019.

- **Elementary School Cyber Education Initiative**, since its launch in 2015, distributed over 7,800 copies combined of version 1.0 and version 2.0 (iOS compatible).
- **Cyber Education Literature Series** launched its first book, *Sarah the Cyber Hero*, in the December of 2017. The book aims to address cyber safety lessons for elementary school children. The book is currently on sale online at Amazon, Barnes and Noble and BookBaby. To date, they distributed over 1,000 copies. A second book is in the planning stages.
- On the opposite end of the spectrum, CyberPatriot most recently developed CyberGenerations (released and piloted in 2018-2019), a program that covers basic topics of cybersecurity and provides additional resources which can help senior citizens identify and prevent potential cyberattacks directed at them or their loved ones. Chapters can present the program as a workshop or individuals may take it at their own pace.
- The CP-XI Finals occurred April 8-10, 2019, in Baltimore MD where the top 28 teams (All Services Division, Middle School Division and Open Division) competed for top honors and scholarships. Team “Troy Tech Support” of Troy High School in Fullerton CA was Open Division National Champion, team "Byte Sized Falcons" of Scripps Ranch High School AFJROTC in San Diego CA was the All Services Division National Champion, and team "CyberAegis Chaos” of Oak Valley Middle School in San Diego CA was the Middle School Division National Champion.
- An AFA Chapter Excellence Award for those chapters which provide excellent CyberPatriot support is in the works with plans for the first award in 2020 for the 2019-20 CP competition season.
- Since 2011, the presenting sponsor, Northrop Grumman Corporation, generously awarded grants to members of First Place, Runner-Up, and Third Place National Finals teams, amounting to over \$450,000 in direct academic financial support. **Northrop Grumman Foundation is the Presenting Sponsor of AFA's CyberPatriot program and has committed to remaining so through 2021.**
- CP is a key initiative of AFA’s Aerospace Education/STEM outreach aimed at raising awareness during formative years of responsible online behavior, of the critical threats facing our nation’s cyber systems, and exciting young people to enter STEM career fields. The 2018 Alumni survey showed that of responding CyberPatriot Alumni who entered higher education, 89% enrolled in a STEM field of study. And of those who are still in high school, 75% are either undecided or already decided to major in a STEM field after graduating from high school. This is solid evidence that the program is working. The June 2019 Cyber Impact report states, “3,396 of the 4,618 respondents were still enrolled in high school or an equivalent program at the time of the survey. 95.6% of those currently enrolled respondents indicated their intention to pursue a 4-year higher education program (87.3%) or a 2-year higher education program (8.3%) after receiving their high school diploma. By comparison, according to the Bureau of Labor Statistics, only 66.7% of American students who graduated high school in 2017 entered college. Additionally, of the 2017 high school graduates who entered college the following fall, only 44.4% enrolled in 4-year institutions.” When asked to what degree participation in CyberPatriot impacted the respondents’ education and career goals, a full 91.3% of the survey respondents indicated their participation in CyberPatriot somewhat (53.6%) or significantly (37.7%) impacted their career and educational goals.

- CP reaches over 100,000 individuals a year.
- **StellarXplorers (STLX):** As a result of the very successful StellarXplorers proof of concept in April 2015, a small volunteer team designed a limited, low cost, program based on space education, use and certification of professional analysis software, and a rigorous, realistic competition. The AFA BoD gave program approval in September 2015. Since then, StellarXplorers has grown from 27 teams in STLX II to 216 teams in STLX V for the 2018-19 academic year. Teams registered from 35 states and two overseas locations, 44% from Title 1 schools. Ten teams went to the National Finals in Colorado Springs, 11-13 April 2019. The "Jets" of James Clemens High School (Madison AL) became the 2019 National Champions. "Tahsin Machine" of Great Mills High School (Great Mills MD) took second place; "LANTZ" from Bergen County Technical High School (Teterboro NJ) placed third.
 - StellarXplorers held two “**StellarXplorers Camps for Educators**” pilots during the summer 2018 for Educators to grasp orbital mechanics fundamentals, learn to use Systems Tool Kit (STK), and work as teams to solve an orbital determination scenario similar to STLX. The first, StellarCamp Houston, occurred at NASA Houston on 27-28 July—AFA past National TOY, Kaci Heins, hosted the camp with AFA volunteer Bill Yucuis as instructor. The second, StellarCamp Florida, was at the University of Central Florida on 25 August, with AFA volunteers Tim Brock and Bill Yucuis as instructors. Yucuis and Brock were awarded with 2018 Exceptional Service Awards for their continuing outstanding volunteer efforts in support of StellarXplorers.
 - StellarXplorers VI registration is underway for the 2019-20 academic year, closing on 5 October.
 - Harris Foundation committed to a \$50K grant to STLX for 2019-20 Academic year; Aerojet Rocketdyne upgraded from StellarSilver to StellarGold; SpaceX renewed as a StellarSilver, and RocketLab has joined StellarXplorers as a StellarSilver sponsor.

2019 AFA AE Budget/Expenditures: The AFA AE budget for 2019 was about \$20,000 larger than the 2018 budget. Chairman Hannam noted that both the CoB and AFA President agreed that in light of a balanced 2019 budget, any **AE donations from the field will be additive; staff developed donations will replace budgeted funds.**

- Compared to the 2016 budget, the 2017 and 2018 AE budgets were more than 50% less; an initiative to reduce the AFA budget deficits. The most significant cut occurred in the program for Pitsenbarger Awards for Enlisted Education, now limited to one award/base Community College of the Air Force (CCAF) graduating class. (In the past, the number of graduates dictated the number of awards per base.) In 2019, Chairman Hannam successfully convinced the BoD to increase Pitsenbarger awards from \$75K budgeted to \$100K. This would allow 2 or more awards at bases where larger numbers graduated via CCAF. To offset the cuts to AE, AFA embarked on an aggressive program to find donors/sponsors in order to make most AE programs self-sustaining.

Program	2019 Budget	2018 Budget	Variance
Pitsenbargers	100,000	72,000	28,000
JROTC	13,000	13,000	-
CAP Program	14,500	14,500	-
Spouse Scholarship	5,000	5,000	-
Arnold Air Society	8,850	3,850	5,000
ROTC	1,380	1,380	-
Chapter Matching Grants	-	-	-
Program	2019 Budget	2018 Budget	Variance
Educator Grants	20,000	20,200	(200)
Teacher of the Year	45,650	44,450	1,200
Fellowships	2,500	-	2,500
Restricted Scholarships	38,250	32,300	5,950
CyberPatriot	3,332,165	3,220,975	111,190
StellarXplorers	265,600	291,660	(26,060)

- Chairman Hannam noted that the **AFA financial** picture is today better characterized not so much as a spending problem, rather it is more of an AFA revenue problem. He explained that he wanted to be in a position to be able to find/approach sponsors like Rolls-Royce to sponsor other AFA Education Programs.
 - Rolls-Royce continued their sponsorship of AFA AE programs to the Platinum Level at \$100K**—this means that their sponsorship is not just the AFA TOY program, rather they are a Platinum Level sponsor of all AFA AE programs.
 - Sijan Chapter President, Kristin Christy, continued to support the 2019 **AFA Spouse Scholarship Program** and donated \$2,500—this, plus the AFA budget funds, provided 1 additional, 3 total, spouse scholarships.
 - In 2017, the Harris Family began donating \$100K in restricted monies to fund a **“Martin H. Harris AFROTC Outstanding Cadet Award.”** One hundred and forty-five AFROTC units present these across the country. The donation provides approximately \$5K/year to fund these awards in perpetuity.
 - AFA gave out **40 Educator Grants** and used the whole budget of \$20,000; each grant was \$500.00. Seventy-two applied from all states. Susan Mallett served on the selection committee.

- The AEC revitalized the **AFA Fellowship Program**. The underlying objectives of this once-active program remain valid and worthwhile; however, it has been significantly underutilized since the Aerospace Education Foundation (AEF) was folded into AFA following *afa21*. An AEC team recently spearheaded an ongoing effort to educate the Field, as well as any other potential donors, on the restructured/revitalized program. Proceeds, as always, go to support AFA education programs. The team rolled out a new, tiered, level of support which is now published on the AFA website. There are newly designed award mementos, and, we plan to publish a list of recipients/donors names on the AFA website.
 - As background, in 1974 Sen. Barry Goldwater, Chairman of AFA's AEF, along with other leaders of the AEF, established the concept of Fellowships as mechanism for the AEF to raise funds in support of its educational programs.
 - AFA Fellowship funds, after expenses, can be applied to AE programs either in the current year, or if funds are donated late in the year, to the following year's AE programs. In 2018, the AEC decided to provide these funds to our partner, CAP/AE, to support the joint CAP/AFA ACE Program that AFA supported in the past. The ACE program is an aerospace-themed program for educators in grades K-6 who are CAP Aerospace Education Members (AEMs) or Senior Members in CAP.
- **THE DISAPPOINTMENTS:** Due to limited use of the University of Maryland, University College (UMUC) tuition waiver program by Pitsenbarger grant awardees, the AFA and UMUC agreed to disestablish their memorandum of understanding. CAE agreed to be an AE program sponsor in 2018, but decided not to sponsor in 2019.
- **AFJROTC:**
 - HQ AFJROTC submitted 29 JROTC grant applications for the spring grant cycle. The total annual budget was \$7500 which was enough to fund 30 recipients. The spring grant cycle expended all but \$250.
 - This year, AFA will recognize a National **AFJROTC Cadet of the Year** at the AFA Air, Space, and Cyber conference. AFJROTC took on the challenge of naming this individual from among 800+ units nationwide.
 - The Air Force began an extremely successful AFJROTC Flight Academy in 2018 which continued into 2019 and is slated to continue into 2020. See attached paper on the Flight Academy.
 - The AEC helped AFJROTC (in advertising via Newslines and the AEC Newsletter) notify AFA chapters about AFJROTC units that had instructor vacancies in order to generate local hires.
- **AFA Scholarships:** Joe Peel, AFA Manager, AE Programs, noted there were an impressive number of applications submitted for the 2019 (Callahan-27; Burgstein-146; Spencer-34; Ferretti-37; Donley-51). AFA announced the winners in July, see AEC 3rd Qtr Newsletter.
 - AFA finalized agreement with Boeing Vertol to fund 3 students to obtain a private pilot's license, 1 per year for three years, up to \$10K; at Destin Flight Works School located in Destin FL. This pays for the lessons only, to include aircraft rental time (no housing); 84 applied; AEC members Dick Bundy and Buck Buckwalter served on the selection board.
 - Trident University and Delta Dental came on board with scholarships and grants this year.

social studies teacher; campus IT coordinator; and Robotics Team Mentor, Enid Chapter 214, Enid OK, nominee. The 2019 National AFA Aerospace Teacher of the Year-3rd place, was **Lori Nelson**, 5th grade science and social studies teacher, Tennessee Valley Chapter 335, Huntsville AL, nominee.

- Sixty-seven AFA chapters awarded chapter TOY; of these, 12 Chapters awarded and self-funded at least one more TOY for a total of 14 additional chapter TOY awardees.
- Twenty-five States awarded State TOY.
- TOY AEC team leads Susan Mallett and Mary Anne Thompson made suggestions to add more impact to the National TOY selection.
 - Thompson requested AFA Senior Director, Government Relations, Keith Zuegel, facilitate (on Monday of September Conference) appointments on the Hill with National TOY winner and introduce them to their Senate Offices and Congressional Offices. Congress will be in session and most will not be there due to travel day on Monday but will continue to work over the summer.
 - Second, AEC would like to have the TOY introduced and meet/greet with the DOD Administration in the Pentagon along with the DOD STEM Director. Zuegel suggested, since the Pentagon is hard to get access to, having a short meet and greet after Chief's Luncheon at Conference on Monday. AFA will help facilitate. Second place winner is a product of Troops to Teachers program which the AFA can help to support and use their message to help the program. Furthermore, the AEC asked Zuegel to help come up with way we can leverage all three TOY winners' messages to help strengthen AFA and programs.
 - AEC would like the National AFA/Rolls Royce Aerospace/STEM Educator to also represent the AFA as AE Ambassador at 1-2 national educator aerospace conferences, such as Space Exploration Educators Conference (SEEC) at Houston's Johnson Space Flight Center in February and/or Spaceport Area Conference for Educators (SPACE) at Kennedy Space Center in July. At one or both events (determined by funding allocations) the National TOY(s) will conduct a presentation about the AFA's AE programs.
 - Beth Leavitt, 2018 National TOY, attended the Air Camp in Dayton in June and said it was the best experience she ever had. Mallett worked with the sponsors of the camp to develop continuing support for future National TOYs to attend.
- **Arnold Air Society/Silver Wings (AAS/SW)** held their 2019 (**72nd**) **NATCON** in Milwaukee, Wisconsin over Easter Weekend. It was a spectacular success. Guest speakers included Undersecretary of the Air Force Matthew Donovan and, filling in for Air Combat Command Commander, General James Holmes (who was unable to attend), was General Robin Rand, the new Chairman of the Board of Trustees. AFA set up a table throughout the event and received dozens of memberships through the half-price 3-year membership special offer. AAS/SW elected April Patko as Commander of the Arnold Air Society and Nicholas Carrigan as President of Silver Wings. See article in AEC 2nd Qtr Newsletter (attached). Mary Anne Thompson retired after 62 years of dedicated AAS/SW Service.

- Nicholas Carrigan, **SW Commander**, provided sites/dates for Fall RCONs. See AEC 3rd Qtr Newsletter for details. He and Hannam asked for AFA Field participation as speakers/support.
- Bill Yucuis led the AEC team that makes **National Aerospace Education Awards** recommendations to the AFA National Awards Committee. The VCAE/AEC concurred in the team's recommendation for **2019 Chairman's Award for Aerospace Education Achievement and the Distinguished Sustained Aerospace Education Award** and forwarded them to the AFA Awards Committee for approval. **Chairman's Award for Aerospace Education Achievement** will be awarded to Air Force AFJROTC Headquarters. The **Distinguished Sustained Aerospace Education Award** will be awarded to Buck Buckwalter. Susan Mallett will be awarded the **AFA Member of the Year**. In addition, Col Paul Lips, former AFJROTC Director, received a **Medal of Merit** as did Todd Taylor, AFJROTC Liaison to the AEC.
 - Also in the AE awards arena, after the National Awards Committee requested a review of the criteria for the **Chapter AE Achievement Award** and the **National AE Excellence Award**, Bill proposed changes to make it easier for chapters to submit for the Chapter AE Achievement Award and to clarify the criteria for both awards. The Region Presidents and Field Council concurred with the changes as did the EXCOM. Bill updated the section of the Field Operations Guide to reflect the updated criteria.
- Mitzi Morrison became the lead for **Newsline** submission and editor of an excellent **AEC Newsletter**, which highlights AFA education programs and compiles and highlights the AE activities of AFA chapters. The 3rd Qtr newsletter highlights the 2019 AFA National Teachers of the Year (attached). In addition, Gabriele Kearney and Joe Peel began a new Facebook page.
- **Air-Minded Strategies Education Initiative**. Bob Elder championed this initiative. It is a proposal to educate Airmen, the American public, and senior US decision-makers about the unique, multifaceted value of the AF to US national security, and to improve the appreciation of the Air Force as a critical tool for multi-national, all-domain operations. Louisiana State University in Shreveport's history department took a lead role in preparing materials that are used for air-minded strategy events and has a repository of materials for organizations interested in conducting AF historical appreciation events. Recent projects included anniversary events commemorating Operation Desert Storm, the Berlin Airlift, and AF response to the 9/11 attacks. Program developers held successful events in the local community and on base as professional development events, hosted by the local AFA chapter and the two bomb wings at Barksdale AFB. AAS squadrons in other geographic areas received materials for their use. Global Strike is very supportive of the program and the initiative organizers are looking to use the Command Chiefs' network to promote the program more widely for professional development purposes. The goal is to foster an appreciation of AF heritage and value among Airmen and their supporters.
- **The Civil Air Patrol 2018 Annual Report to AFA** noted the significant education support that CAP provides (attached). Also noted was the significant reduction in student impact that resulted from the reduction in AFA Grants for CAP Units and Educator Members from 2017 to 2018. (Note: the report does not address 2018-2019, but similar funding shortfalls existed.) These funds enable CAP units and educator members the opportunity to complete special aerospace/STEM education projects and programs with young people across the country. CAP also provides outstanding support to AFA's CyberPatriot and StellarXplorers Programs.

- This year, Chairman Peters asked the AEC to conduct an AEC program assessment which coincides with a requirement in some of our AEC documents. This gave us an opportunity to look at our programs and possibly argue to increase AEC program funding. Dick Bundy, Senior Advisor, led this initiative with assistance from Buck Buckwalter and Mary Anne Thompson along with Gabrielle Kearney. Kari Voliva helped from AFA staff. See attached program review paper.

Respectfully submitted,

Jim Hannam
Vice Chairman of the Board, Aerospace Education

Attached:

1. AEC Tasks/Objectives/Teams
2. 2019 CyberPatriot Impact Report, Jun 2019
3. AFJROTC Flight Academy
4. AEC 2ndQtr 2019 Newsletter—AAS/SW Commanders
5. AEC 3rdQtr 2019 Newsletter—TOY & AAS/SW RCONs & Scholarship Winners
6. Talking Paper on AFA Policy on For-Profit Education Relationships
7. 2018 CAP Annual Report to AFA
8. AEC Program Review